

UNITED NATIONS

ECONOMIC
AND
SOCIAL COUNCIL



GENERAL

E/CN.12/898

7 March 1971

ENGLISH

ORIGINAL: SPANISH

ECONOMIC COMMISSION FOR LATIN AMERICA

Fourteenth session

Santiago, Chile, 27 April to 8 May 1971

THE HUMAN ENVIRONMENT IN LATIN AMERICA

Note by the secretariat

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INTRODUCTION

INTRODUCTION

Action to deal with the deterioration of the human environment in Latin America has hitherto been confined to the best known and most acute problems; but broader measures are now being taken, under pressure from those that are directly affected by it and as a result of the evidence that is piling up in well-informed circles to show how much the sins of commission and of omission of the Latin American countries themselves are responsible for the problems that are affecting their region, and for the appearance of situations which may lead to a repetition in the Latin American countries of the terrible ills from which their predecessors on the road to industrialization are already suffering.

The proximity of the United Nations Conference on the Human Environment (to be held in Stockholm in 1972) makes this an opportune moment to study the subject within ECLA, since General Assembly resolution 2657 (XXV) recommended the inclusion in the agenda ... of the Preparatory Committee "of one or more specific items relating to economic and social aspects in order to safeguard and promote the interests of developing countries with a view to reconciling the national environmental policies with their national development plans and priorities". The present note provides some material that could be used for a discussion of such an item. It describes some features of the problem as it arises in the region and raises the queries regarding its relation to development which emerge from a preliminary consideration of the question. It concludes with a summary of those aspects of the problem on which ECLA has focused its attention up to now and an indication of action that could be taken in the future.

1. Description

1. Description of the problem

In the Secretary-General's report to the Preparatory Committee for the United Nations Conference on the Human Environment, the following tentative, definition is given: "the term 'human environment' refer to those aspects of man's activities which, by affecting the natural ecological systems of which he is part, affect his own life and well-being".^{1/}

The convening of this Conference was prompted by concern at the ever-increasing deterioration of the human environment which in the end, makes any kind of human well-being practically impossible. This steady deterioration stems mainly from the inability of the social systems to mitigate the strains placed upon the environment by population increase, and from industrial activities which take their inputs out of the environment and pour back their waste materials. These agents of the process of deterioration affect man, either directly - by polluting the habitat where he lives, works, brings up his family and seeks his recreation - or indirectly, through a loss in the productivity of the natural resources which sustain his life.

These problems have always existed to a certain degree, at least in localized form. But now, through scientific research, it is possible to evaluate the serious consequences that occur when such problems spread and engulf whole towns, areas, countries and regions of the world. This explains the concern for this problem expressed in the International Development Strategy for the Second United Nations Development Decade.^{2/}

Increased urbanization and industrialization in the developed countries are debasing the environment, if not placing unexpected obstacles in the way of production to meet the demand for goods and services.

^{1/} Document A/CONF.48/PC.8, Geneva February 1971.

^{2/} Paragraph 72 of General Assembly resolution 2626 (XXV) of November 1970 states: "Governments will intensify national and international efforts to arrest the deterioration of the human environment and to take measures towards its improvement, and to promote activities that will help to maintain the ecological balance on which human survival depends".

The developing countries are also beginning to wonder whether it would not be possible to improve their well-being, despite lower income levels, through protection of the environment; moreover, the problems of mass production - many of which are caused by activities outside their control - are per se more difficult to solve for the developing countries, because their scope for action is more restricted.

The information collected by ECLA - which is mainly a by-product of research on other subjects (natural resources, agriculture, urban and regional development) - does not provide an adequate picture of the situation in Latin America in respect of the environment. For that reason, it is possible only to highlight some of the problems that afflict the countries of the region - problems that call for more vigorous, early and systematic action. Some of these problems are discussed below.

(a) Urbanization

It is well known that urban development in the region is passing through a period of crisis. The rapid growth of the major cities, with insufficient opportunities for remunerative employment and not enough capital to expand and renovate plant and public utilities, has led to the emergence of marginal settlements whose inhabitants live in utter poverty, and to a deterioration of housing, recreational and transport facilities for the great masses of the population.

Allowing the operation of noisy factories that discharge toxic gases and smells, and other forms of consumption that also pollute the environment - motor-cars, heating systems that produce smoke, etc. - are causing serious air pollution problems in Buenos Aires, México City, Santiago, Lima, Sao Paulo and many other urban centres, as is shown by the systematic studies undertaken by the Pan-American Health Bureau.

Notable strides were made with drinking water supply in the 1960s; 75 per cent of the urban population now has piped drinking water, although the service leaves much to be desired in terms of quality (regularity, pressure, purity of water, etc.). Much less progress has been made in the provision of sewerage facilities (less than 35 per cent of the population has sewerage) and sewage disposal plants. This frequently leads to the pollution of ground and surface water supplies, and outbreaks of gastro-enteric diseases and

/even other

even other diseases, as a result of the contamination of the drinking water supply by toxic minerals, which may occur naturally or be produced by mining activities.

The situation with regard to refuse disposal is worse, for few towns have hygienic disposal plants.

These problems have preoccupied the experts concerned with urban development, town planning and health protection. The isolation of those problems that could be dealt with in the context of the human environment is a difficult but necessary task, on which experts all over the world have begun to work.

(b) Natural resources

The ill-advised exploitation of a natural resource can reduce its economic availability and, through the natural environment, affect that of related resources. There are many examples of both in the region.

(i) Land. There is scarcely a country in the region that does not have problems related to the conservation of its rural environment. Very few have a proper knowledge of the current and potential use of their agricultural land and, despite progress that has been made, there are still well-known economic, social and institutional obstacles to the rational utilization of the soil. This frequently results in soil exhaustion through a combination of latifundios and minifundios, bad farming methods in areas of subsistence agriculture, shifting cultivation which leaves ruin in its wake, unplanned land settlement, etc. In this way, forest areas which played an important part in protecting land and water resources and even in maintaining the climate (Haiti, the coastal range in Chile, north-east Argentina, etc.) have disappeared, and erosion has followed, destroying valuable well-situated agricultural land in areas such as the temperate mountain regions in the Andean countries (Peru, Bolivia, Ecuador, Colombia and Venezuela) and Central America. Thus the desert has encroached on the Argentine pampa, and droughts and floods have become more serious in north-east Brazil and the high plateaux in the Amazon basin. Even such rich and well-developed areas as the lush pasturelands of Argentina and Uruguay have thus been impoverished.

/As regards

As regards the use of pesticides and other modern agricultural inputs, they have not been tested out so thoroughly in Latin America as in the countries where these auxiliary materials originated, so that their effects on the Latin American environment are not fully known, although some of the consequences have already been serious, as in one Central American country where there have recently been over 2,000 cases of poisoning by pesticides.

Agrarian reform is doing something to remedy the misuse of land. From the ecological standpoint, however, drastic changes usually result in serious setbacks unless they are preceded by appropriate studies, which generally take a long time in relation to the speed with which the desired changes have to be introduced.

The assignment of land for agriculture and other activities is not properly planned. Zoning in the vicinity of the cities is left to the free play of interests and the public authorities have been too weak and ineffective to resolve conflicts between national, provincial, suburban and private projects works.

The possibilities of maintaining a proper distribution of green areas, ensuring access to them and providing for their renewal and protection are steadily being undermined by circumstances which will cost the coming generations dear.

(ii) Forests. Failure to recognize the importance of the ecological function of forests and, in particular, the weakness of the authorities responsible for their protection have resulted in serious damage to Latin America's forest resources. In many parts of the region the destruction is continuing, in spite of its detrimental effects on the environment, which are there for all to see. Latin America has a great wealth of forest resources, about half its total area is forested and this represents half the forested area of the world. Accessible forests account for 30 per cent of the total, and one-third of this - or 100 million hectares - are exploited. The area of forest destroyed by indiscriminate felling and fires is estimated at some 10 million hectares a year. Most of Latin America's forests contain trees of

/many different

many different species and varying ages, so that selective felling is expensive. Where there has been intensive exploitation in the past for industrial purposes or to clear land for rural land settlement, the forest cover which used to protect the water and soil system has been almost completely destroyed.

(iii) Fishing. Many lessons have been learnt from the boom in sea fishing off the coasts of Peru and north Chile (which accounts for one-sixth of the annual world catch), some of them from research and others from the failure of industries. The prosperity of the fishing industry in this area is based on anchoveta, but anchoveta fishing has reached a peak beyond which yields are bound to decline. This example has induced several countries to give more study to their marine resources, but much still remains to be done before enough is known about their fisheries potential and steps can be taken to protect it from over-exploitation by local fishermen and international fishing fleets, and from the pollution of the coastal waters.

Inland waterways and estuaries are also over-fished, no advantage being taken of the possibilities of introducing and cultivating species which could supplement the diet of the inland population. Fishing is carried on indiscriminately, with explosives and other destructive devices, wherever supervision is incomplete or lacking.

(iv) Fauna and parks. The destruction of forests and the uncontrolled exploitation of certain natural species of fauna and flora are depleting reserves that are important for scientific and practical purposes and for maintaining the ecological balance in areas which, because they are easily accessible, have a big role to play in the region's development in the next few years. As regards destructive animals and vectors of human and animal diseases, very little is known about the forms of balance or about how the deterioration of the environment might make these species more harmful.

Forest reserves and national parks have been established in many countries with a view to filling in these gaps in knowledge and to preserving recreation areas; but, with certain notable exceptions, the regulations have not been obeyed, which has resulted in damage that is likely to have deplorable consequences in the not too distant future.

/((v) Water

(v) Water resources. Water pollution by urban waste, soil erosion, and the destruction of vegetation constitutes the main problem affecting the quality of the water and the regime of the rivers in the interior. If consideration is also given to the fact that there is a shortage of water to supply some cities and for agriculture in semi-arid regions, it is easy to understand that stricter planning of water use and conservation, which is of capital importance for the over-all ecological balance, is becoming a must in nearly all countries of the region.

The region is abreast of the most up-to-date techniques for basin-wide planning of water resources, although their use is not so widespread as might be wished. In contrast, very little has been done to include the ecological variable in water resources planning. The fact that comparatively small projects have had harmful effects that had not been foreseen, as in the case of some irrigation works (a rise in the water table, the appearance of salinity, water-borne diseases, etc.) need not be taken too seriously, but this must not be allowed to happen with the big dams and canal systems contemplated for the future - such as the projects in the River Plate basin, the Amazon basin and on the great rivers of Colombia and Venezuela - if the costly mistakes made in similar projects in other parts of the world are to be avoided. International co-operation is particularly advisable for projects of this type in drainage basins that lie in more than one country.

(vi) Air. In addition to what has already been said about air pollution in cities, it should be remembered that the purity of the air and certain climatic factors that are essential to urban and rural life should also be protected against pollutants and activities that have less immediate and specific effects and which mainly originate in the more industrialized countries, such as the dissemination of radio-active materials in the atmosphere as a result of experiments or accidents with atomic weapons and nuclear plant, and the deleterious effect on the quality of the air in extensive regions produced by the increase in the proportion of carbon dioxide (CO_2), resulting from the lack of balance between the combustion which produces the gas and the green areas that can absorb it. All that can be done about these problems for the moment is to be on the watch and prepared for action when the time comes.

/(vii) Energy

(vii) Energy, petroleum and mining. Forty-eight per cent of the electricity consumed in the region is provided by hydroelectric plant (19,100 MW) and the remainder by thermoelectric plant (20,900 MW). This is why there is not so much pollution from thermoelectric power stations as in the United States and some European countries, where they are responsible for very serious air and even water pollution (the rain absorbs the fumes so that the rainwater is contaminated, and the discharge for our cooling systems raises the temperature of the water, bringing about changes in aquatic flora and fauna). Nevertheless, there are some power stations which pollute the atmosphere in Latin America (in Greater Buenos Aires, Santiago and Montevideo); prevention and control must form part of the measures to be taken when there is a dangerous rise in the indices of pollution.

Hydroelectric plants, however, have taken the lead in river management and planning and so far have done nothing but good.

Mining and petroleum extraction, which are of vital economic importance to several countries in the region, have generally helped to improve the areas where these activities are carried on through the construction of model towns, roads and ports and the provisions of social services, etc. However, when arrangements are being made for these activities, the principle that they do not have to have harmful effects on the environment, should be borne in mind.

Water pollution by metal sweepings and petroleum waste has been dealt with when it has become so marked as to be dangerous, but much more research needs to be done in this field. Less attention has been paid to air pollution by the gases that are given off in the production of hydrocarbons, the dust produced by milling and by the operation of transport, and by fumes from processing plants. Other kinds of environmental deterioration will have to be dealt with as soon as the economic feasibility of pollution control has become generally accepted.

2. Concepts

The protection of the human environment, in the widest sense, covers almost all mankind's activities and has to some extent been recognized as a new approach to unified development planning. Most of the Latin American countries already have some kind of established planning system, to which a new dimension should now be added. If this new concept is to be viable, it must first be reduced to manageable proportions so that it can be taken into consideration existing plans; also, within the broadest possible view of the relationship between ecological systems - which can be conceived as a single system - it must be kept in mind as far as possible when countries are deciding what steps must be taken to deal with their most urgent problems.

A clear idea of the basic concepts involved is needed for the preparation of a strategy of this kind; some of these are discussed below.

(a) The region's problems: their true nature, their origin and their consequences

There are two distinct types of problem. The first type originates outside the Latin American environment and is beyond the region's control. Problems of this type include large-scale pollution of the air and the sea caused mainly by the activities of the industrialized countries. In this case the only thing that can be done apart from keeping a constant watch upon the situation, is to sound the alarm through international channels and try to obtain as much co-operation as possible in remedying the situation.

The second group of problems originate in the environment itself and can be dealt with more immediately, since Governments can take more direct and independent action in these cases.

The causes of environmental deterioration are generally as follows:

(i) the indiscriminate introduction of industrial technology and modern patterns of consumption (mainly among the middle and upper income groups), which have effects upon the environment that the developed countries are beginning to check at a cost that Latin American countries cannot or are not yet willing to pay; and (ii), the poverty and marginalization of a large section of the population, its accelerated growth and its primitive way of life and of earning a living which rapidly exhaust the natural resources since they are not kept within the limits required by conservation and form foci of pollution. /The industrialized

The industrialized countries also have these two kinds of problems, and much of their experience will be useful to the region; but since the first group of problems is more common in those countries, they have a different approach, and therefore the region will have to devise its own methods and criteria for action.

There is a tendency to under-estimate the environmental problems of the lower income groups and to identify them with a concern for the "quality" of life which is more in keeping with the problems of richer countries. It may therefore be concluded that the developing countries should give preference to "preventive" measures so as to avoid falling into the predicament the industrialized countries are now in, for which correction is the only cure. Latin America must then ask itself some of the following questions. Does it not need urgent corrective measures at the level of living it has reached? Does the population of the poorer districts not need better as well as more basic necessities? Besides a basic diet containing enough calories and nutrients, do they not need a certain standard of health and sanitation, without which calories and nutrients would be wasted? Would not the indicators of the level of living be one way of measuring what real progress is being made towards development?

With regard to the problems of pollution and environmental deterioration, the developing countries will have to ask themselves how far they should attack the causes of the problems, since they are to be found in the very roots of their economic and social system - a system in which some of the population live at the expense of the environment because they have no other alternative, while others also live at the expense of the environment by adopting depredatory patterns of production and consumption, not because they have no choice but because they fail to take the necessary precautions.

It is important to know all the effects of the different agents which cause degradation of the environment on the physical and mental health of man and on the productive capacity of his natural resources in order to determine what corrective measures should be taken and with what priorities. Unfortunately, a great deal of costly research is required in many cases before valid results can be achieved; and it is not a solution to take

/over experience

over experience gained elsewhere, which, if it is done without due care, may lead to erroneous conclusions. When there is a margin for adaptation by choosing other activities of technological processes, it would seem wise to impose controls, although there may only be a well-founded suspicion that all is not well. Under subsistence conditions, however, such measures may have radical social consequences. Thus the fewer the region's financial resources, the more careful it must be in determining the consequences of environmental deterioration, and this places it in the horns of a planning dilemma.

(b) Environmental management and development

There are some in the developing countries who argue that applying strict measures to protect the environment might be a serious obstacle to development, and it has even been said that the problems of the environment are a "disease they would be prepared to risk if it is a necessary accompaniment to the economic growth they want and urgently need".^{3/}

To reach conclusions on this question is beyond the scope of the present study, for it is something that the developing countries will have to deal with in the light of changing circumstances. The basic question is whether too much stress on environmental measures might have the effect of postponing projects with a comparatively higher social cost-benefit ratio. According to the data available, preventive measures taken in advance would not represent much of a cost penalty for production, but correcting situations that have been in existence for years might require a vast amount of capital and represent a high annual outlay.

In Latin America both preventive and corrective measures are needed, but it would seem obvious that the emphasis should be put on preventive measures, starting with those that are cheapest, for corrective measures might turn out to be rather expensive if the aim was to achieve a complete and immediate solution. A selective strategy could yield good results at low cost - for example, the immediate improvement of chlorination levels in public drinking-water supply, could considerably improve the level of health.

^{3/} Statement by Mr. Strong, Secretary-General of the United Nations Conference on the Human Environment, 8 February 1971 (A/CONF.48/PC.9), Annex IV.

(c) Cost and evaluation of environmental management

Protecting the environment involves choosing among many options, both as regards objectives that may conflict with each other, and as regards the instruments to be used. For example, preventing environmental pollution may include measures designed to: reduce the discharge of pollutants; reduce the damage caused by pollutants; reduce the overcrowding that tends to raise pollution levels; and reduce the rate of population increase.

The range is very varied, for it runs from purely administrative measures, such as obliging a factory to instal additional equipment or change its manufacturing process, to developing a regional planning and even a population policy, with all that that entails in terms of social planning.

The measures that may be taken can be divided into three major groups, as follows:

(i) Measures to deal with actual or imminent catastrophe, for which authorities must secure funds even at what ever cost. These are cases in which the health of population groups is in serious danger (epidemics, floods, etc.) or there is a threat to the supply of natural resources which are of vital importance to particular communities. Economic appraisals are not really relevant in such cases, and any postponement of the necessary action can only be the result of complete ignorance or utter confusion - fortunately rare in Latin America.

(ii) Measures associated with industrial progress and with certain aspects of urban development, which are very similar to the measures that are the main concern of the industrialized countries. These can be appraised using the criteria applied by the industrialized countries, which are basically aimed at finding out which measures among those with the best cost-benefit ratio, are the easiest to implement from the technical, financial and political standpoints. Because of the wide variety of possible measures and combinations of measures, it may be quite a complicated task to work out the ratio of costs to benefits, especially if indirect and associated costs and benefits are taken into account. Such measures will generally affect enterprises that can afford them and social strata that

/can also

can also afford the cost of keeping the amenities or values they wish to preserve. The authorities will have to apply principles of equity to ensure that the costs are paid as far as possible by those directly responsible for the damage, and that only a reasonable part of these costs is passed on to the community through prices. It then has to be decided whether this inevitable price penalty can be paid or whether it constitutes too much of an obstacle to development.

(iii) The third group of measures more generally affect the lower income strata and stems from the fact of under-development itself. They may bring unemployment to large groups or be too heavy a burden to be borne directly by those concerned. It is very difficult to evaluate these measures, for they involve social considerations for which the State must assume a high degree of responsibility. They would include, for example, the banning of certain pesticides, which might well entail a considerable reduction in crop yields. In any case, it is necessary to establish where the real social responsibility lies in these cases and to bring it to the fore, even if this may mean that the corrective measures will involve sweeping changes in the existing system.

(d) The environment and international economic relations

There are cases of environmental pollution that involve more than one country and that must be dealt with in a co-ordinated manner. So far, reference has been made to the most salient features of atmospheric pollution and pollution of the oceans and certain international waterways and drainage basins. But there are two other points relating to environmental management which concern the industrial development and the international trade of the developing countries.

It has been suggested that, as a means of reducing environmental pollution in the industrialized countries, more activities associated with the utilization of the region's natural resources could be located in those parts of Latin America where congestion is still well below what is considered a permissible level (for example, locating copper-related activities in the northern desert regions of Chile). Although this might suggest the idea of importing "dirty" industries, with all the problems they involve, it is worth looking into, since it is becoming increasingly easier

/to assess

to assess the capacity of the biosphere ^{4/} to receive pollutants and to maintain a certain degree of balance as regards human well-being. On the basis of this, consideration could be given to using the sparsely populated areas of the continent in return for employment and development possibilities.

The other concern of the developing countries is related to the limitations that environmental considerations are introducing with respect to their exports to the industrialized countries, it is clear that constant vigilance will be necessary in order to keep up to date with all the demands of the industrialized countries in this respect, and to ensure that these demands are reasonable and just.

Furthermore, measures to protect the environment will necessarily be reflected in the price policy for external trade. If the developing countries are going to have to pay more for their manufactures because of the measures being taken by the industrialized countries, then they too will have to add to their prices the cost of protecting their natural wealth from the contamination and depletion that the productive process may involve, and also the cost of maintaining the quality standards required by the consumer countries.

In all these respects, it will be very useful to have an exchange of views and joint discussions on environmental problems with the industrialized countries, and the United Nations Conference on the Human Environment in Stockholm should offer an excellent opportunity for this.

(e) Institutions for environmental action

The mobilization of the institutional machinery for environmental action is perhaps the crucial question, since nothing that has been said above can have any practical significance unless the will for action is translated into attitudes and institutions which will give it effect. Certain barriers that are bound up with the fabric of society and may therefore be called institutional, such as ignorance and the inability of

^{4/} The layer enveloping the earth in which life can exist. It includes the soil as far as roots can penetrate, and the seas and atmosphere as far as they can sustain natural forms of life.

some social groups to participate in programmes, can be overcome only by means of a prolonged educational effort. The mobilization of Governments and related bodies, on the other hand, is an immediate possibility. How this is to be done and the extent to which it can be achieved hinge so much on circumstances that it is difficult to generalize about it.

The industrialized countries which are most affected by the deterioration of the environment have organized ministries (United Kingdom), agencies with full powers at the presidential level (United States) and many other types of co-ordinating institutions.

In Latin America, critical situations have been dealt with by means of campaigns organized by individual sectors, such as those for the conservation of renewable resources linked to projects and programmes of the Ministries of Agriculture, Public Works, etc. The Ministries of Health have also done excellent work in warning of widespread dangers to the health of workers and the population at large. In urban planning there has perhaps been as much concern as confusion among the participating institutions.

What can be done in the future in the light of the new concepts of unified environmental planning? The only answer is to adopt a practical approach. Without establishing over-ambitious new institutions - which more often than not are doomed to failure, mainly for want of qualified staff and politico-administrative possibilities of action - it is necessary to arouse an awareness of the problem and adopt a co-ordinated approach through stable institutions to deal with specific situations.

Since this is an eminently interdisciplinary activity, a wide range of government institutions will be represented on the teams engaged in it. Many Latin American countries possess a fund of useful experience, in the work done by inter-ministerial committees on this subject; however, almost all of them are aware that the scope of these special committees is limited, unless they are set up at a fairly high administrative level and are given a permanent mandate. The most important thing is to create institutions judiciously, as the need for them arises.

3. Information on the problems of the environment

There is not enough of the right kind of information on environmental problems in Latin America for the new unified approach, indeed, there are serious gaps in it, especially in the conceptual field.^{5/}

There is an enormous amount of documentation and statistics on urban development which provides information about the problems to which concentrations of population give rise; but although there is abundant material, no clear directives for ecological action emerge from it. There is also a fair amount of conservation literature, which is probably closest to the new approach, on the problems produced by the deterioration of soil, water, forests, fishing resources, national parks, etc.

The absence of what might be called a coherent theory of the human environment has a marked effect upon the information process, particularly in the region, where such theory is still in its infancy. In any event, strong new action should be set in motion to weld the three components of the information system - namely, (i) the sources; (ii) processing and transmission; and (iii), the users - into a balanced and coherent whole. Since it relates to the operation of systems with natural links, the nature of which is the root of the problem, this subject should be approached in the most unified and interdisciplinary way possible, if the results are to be better than those achieved so far, which have been only partial.

Since there is a great need to understand the nature and the dimension of the problems, and their causes and consequences, steps should be taken to increase the flow of data from the sources of information (statistical and monitoring services, public and private bodies that make studies of the environment, etc.), which should be strengthened and adapted to local needs. This should be done through the national planning bodies, so as not to waste the small number of experts available on work

^{5/} Although not so serious, the situation is similar in Europe. See the Commission of the European Economic Community's paper on the identification of information needed to promote strong and workable environmental action at the national and international levels (ENV/Working Paper N° 4), 25 August 1970.

that is not concerned with priority development fields, and so as to prevent any distortions of information that might arise from the multiplicity of publications and the technical assistance offered by the industrialized countries. The relations that are established between the government agencies responsible for taking action and the scientific community will be vital in reaching mutual understanding, and this understanding will help to remove many obstacles to action that are due to lack of information.

The centres where the information is processed and transmitted, which are the link between the sources and the users, have a very important task to carry out and a fruitful field for immediate action. With adequate financing, a system of national and regional centres could be organized to collect and channel local information and that produced by international organizations and by study and research centres throughout the world.

Work must also be done on users; profiles must be prepared and the users must become part of the information system; they should not only receive material from the sources but should feed back information on the kind of material they need. Careful study should be given to ways of reaching the general public and youth with a special educational material on environmental problems, since the answer to many of these problems lies in the attitude of the individual.

4. ECLA activities

ECLA has not been greatly concerned with the problem of human environment in its current unified form, but it has placed emphasis in its studies on most of the situations where there is a deterioration of the region's basic natural resources and has prepared studies on the process of urbanization which will contribute to the understanding of environmental problems connected with industrialization and urban congestion.

The Natural Resources and Energy Programme, with the support of the United Nations Development Programme, the Pan American Health Organization and the World Meteorological Organization, has for several years been carrying out studies on the use of water resources in nearly all the countries of the region. These studies have included consideration of the pollution of water, estuaries and beaches, flood control, erosion and zoning policies based on the availability of water, all topics connected with the protection of this environmental factor.

In its studies on regional and urban development, ECLA is paying increasing attention to the possibilities of improving the utilization of the natural environment so that economic activity may be reorganized in industrial units that are less dependent on foreign aid and more rationally planned. The development of new areas has been considered in the light of the possible utilization of land and resources to revive regional economies and help to improve the countries' equilibrium, while reducing the strain on cultivable land and overcrowding in the great urban centres. In this work and in teaching activities, ECLA has joined forces with ILPES.

Other related topics will be added in the future, such as tourism in the Caribbean, irrigation in Mexico, regional and urban planning in Brazil, mining in the region as a whole, and the assimilation of advanced techniques. However, for greater attention to be paid to the specific problem of the human environment, additional funds will be required, particularly in order to define the conceptual basis for an interpretation of the problems of the human environment in the light of the actual economic and social situation in the region and for an evaluation of corrective and preventive measures.

/Some study

Some study is being given to environmental questions in connexion with the forthcoming Stockholm conference and the regional co-ordination of the preparatory work for the conference that has been assigned to ECLA. Attention will probably be focused on these tasks in the next few months.^{6/}

In the longer term, ECLA, in conjunction with ILPES, could help to design a regional research strategy, which would make the most efficient use of the scanty resources, particularly staff, that can be assigned to this task. The strategy could cover the activities of the international agencies of the United Nations, universities, etc., and even governments, if they so desire.

ECLA and ILPES would deal with such questions as would permit them to extend their capacity for interpreting the problems of the economic and social development of the region and for providing advisory assistance and training in the planning processes. Although it would be premature to suggest what those topics should be, mention may be made, by way of illustration, of the subjects included in the agenda of the meeting of a group of experts convened for next June by the Secretary-General of the United Nations Conference on the Human Environment, which would provide a basis for interesting research into the existing situation in Latin America:

- (1) Is there a conflict between the preservation of the environment and development?
- (2) What are the main questions relating to the preservation of the environment that arise in the different studies being carried out by the countries of the region on agricultural and industrial development, urbanization and infrastructure?

^{6/} Of particular importance among immediate tasks is the preparation, in co-operation with the general secretariat of the United Nations Conference on the Human Environment, of a regional government seminar, to be held in late August or early September next.

- (3) What questions and problems arise in respect of balancing different alternatives for macroeconomic planning (location of industries, choice of technology, physical planning) and for project appraisal?
- (4) Measures for carrying out an environmental policy based on the allocation of resources and social controls (taxes, incentives, etc.), and its institutional requirements.
- (5) International aspects of concern for the human environment: trade, transfer of technology, location of industries, external aid.

ECLA could also include among the tasks of the recently formed Latin American Centre for Economic and Social Documentation (CLADES) the preparation and dissemination of the information on this subject being produced by the United Nations and the specialized agencies (such as the ILO, FAO, UNESCO, WHO, WMO, IAEA, ICAO, IMCO), other international organizations, Governments and research centres. It is only with the media that will be available to the Centre that it will be possible to carry out meaningful work in this area at the world level.